

CLAIMS

What is claimed is:

1. A method comprising, etching a metal silicide layer during fabrication of an integrated circuit in a Cl_2/O_2 environment having an O_2 concentration of greater than or equal to 25% by volume.
2. The method of claim 1 wherein the Cl_2/O_2 environment is provided at a pressure of approximately 2 - 40 Torr.
3. The method of claim 2 wherein the pressure is approximately 3 mili-Torr.
4. The method of claim 1 wherein the Cl_2/O_2 environment is provided in a reactor with a source power of approximately 200 - 2000 Watts.
5. The method of claim 4 wherein the source power is approximately 400 Watts.
6. The method of claim 1 wherein the Cl_2/O_2 environment is provided in a reactor having a bias power of approximately 35 to 400 Watts.
7. The method of claim 6 wherein the reactor has a bias power of approximately 50 Watts.
8. The method of claim 1 wherein the metal silicide layer is a tungsten silicide layer.
9. The method of claim 1 wherein the Cl_2/O_2 environment comprises approximately 45 sccm Cl_2 and 30 sccm O_2 .
10. The method of claim 9 wherein the Cl_2/O_2 environment is provided for a time period sufficient to completely etch the metal silicide layer.
11. The method of claim 9 wherein the time period is approximately 30 seconds.

1 ~~12. A method comprising etching a metal silicide layer during fabrication of an integrated~~
2 ~~circuit in an environment having a high concentration of O₂ so as to fully etch the metal~~
3 ~~silicide layer without etching an underlying poly-silicon layer.~~

1 13. The method of claim 12 wherein the O₂ concentration is greater than or equal to 25% by
2 volume.

1 14. The method of claim 12 wherein the environment comprises approximately 45 sccm Cl₂
2 and 30 sccm O₂.

1 15. The method of claim 12 wherein the metal silicide is chosen from the group consisting of
2 tungsten silicide, chromium silicide and titanium silicide.

1 16. An integrated circuit comprising a metal silicide layer etched within an environment that
2 provides high selectivity to poly-silicon.

1 17. The integrated circuit of claim 16 wherein the environment comprises a concentration of
2 O₂ of at least 25% by volume.

1 18. The integrated circuit of claim 17 wherein the environment comprises a concentration of
2 approximately 45 sccm Cl₂ and 30 sccm O₂.

1 19. The integrated circuit of claim 16 wherein the environment comprises a Cl₂/O₂
2 environment having a concentration of O₂ of at least 25% by volume.

1 20. The integrated circuit of claim 16 wherein the metal silicide layer comprises a portion of
2 a gate structure.